

EXHIBIT 33

REDACTED

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

**UNITED STATES OF AMERICA, ET AL.,
Plaintiffs,**

v.

**GOOGLE LLC,
Defendant.**

Case No. 1:23-cv-00108 (LMB/JFA)

EXPERT REPORT OF MARK A. ISRAEL

January 23, 2024

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sound economic framework for assessing market power or competitive effects.⁴²¹ In short, because shares within Plaintiffs' proposed markets cannot predict basic market outcomes like price trends and relative price levels, there is little reason to think that they can be reliable indicators of monopoly power.

Table 8: DFP, AdX, and Google Ads Average Prices Over Time

Year	DFP (\$/1,000 billed units)	DFP (% fee on \$2 CPM impression)	AdX Open Auction (% fee)	Google Ads (% fee)	Total (for \$2 CPM impression)
2009	--	--	20%	14%	33%
2011	--	--	20%	14%	33%
2014	\$0.033	1.7%	--	15%	34%
2015	\$0.031	1.5%	20%	14%	33%
2016	\$0.030	1.5%	20%	14%	32%
2017	\$0.028	1.4%	20%	10%	30%
2018	\$0.026	1.3%	20%	12%	31%
2019	\$0.027	1.3%	20%	11%	31%
2020	\$0.023	1.2%	20%	13%	32%
2021	\$0.027	1.4%	20%	14%	33%
2022	\$0.027	1.3%	20%	13%	31%

Sources: GOOG-AT-MDL-DATA-000561426 to -535 (DFP RFP 243 data), GOOG-AT-MDL-DATA-000066537 to -482007, GOOG-AT-MDL-DATA-000508827 to -58886, and GOOG-AT-MDL-DATA-000561536 to -4882 (AdX RFP 243 data), GOOG-AT-MDL-DATA-000486626 to -8277 (Google Ads RFP 243 data), GOOG-AT-MDL-DATA-000561031 to -262 (XPP-M data), GOOG-DOJ-03065440 at -444-445 (for 2009 AdX and Google Ads fees), GOOG-DOJ-AT-02643917 at -951 (for 2011 AdX and Google Ads fees), and GOOG-DOJ-AT-00569936 (for 2014 Google Ads fee)

Notes:

[1] The DFP fee is calculated among publishers paying ad serving fees. Billed units are approximately equivalent to impressions.

[2] The Google Ads fee is the average fee for Google Ads' purchases via AdX, averaged across two available data sources (RFP 243 and XPP-M). In each data source, the Google Ads fee is calculated indirectly by subtracting an estimate of the standalone AdX fee from the combined Google Ads and AdX fee available in the data.

[3] The total column assumes a DFP fee of \$0.033 per thousand billed units in 2009 and 2011, and an AdX fee of 20% in 2014.

⁴²¹ Plaintiffs and their experts may claim that the price effects of Google's alleged monopoly power in publisher ad serving are felt elsewhere, such as ad exchanges (where prices are comparatively higher) (see, e.g., *Lee Report*, n. 6). But AdX's fee has not meaningfully increased since its inception even as Plaintiffs allege that DFP's share has grown to approximately 90 percent; moreover, any such claim simply underscores the need to think about competition (and fees) across the entirety of the ad tech stack, as opposed to carving it up into narrow pieces.

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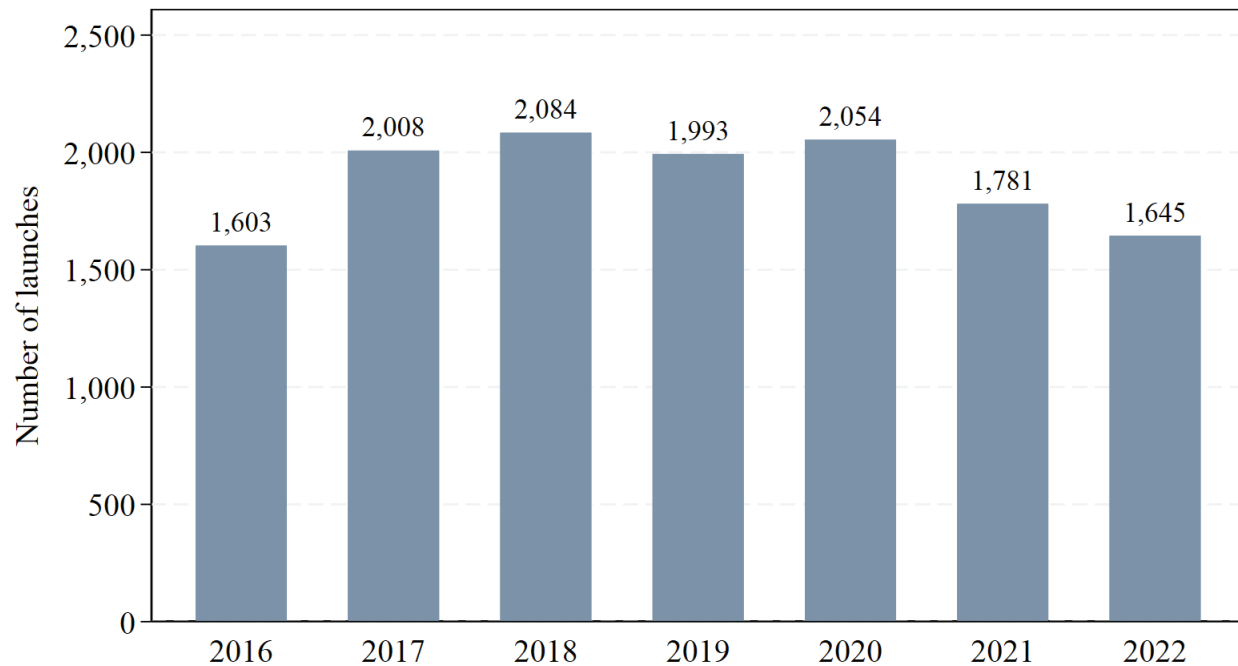
- A 2021 document summarizes areas of planned investment, including supporting additional ad formats, auction optimizations to grow publisher payout, and support for industry initiatives to provide greater transparency regarding programmatic transactions.⁶⁷²

478. As a summary metric of Google’s continuous investments in its ad tech offerings (the selected examples above are far from comprehensive), Figure 66 plots the number of unique product launches by year from 2016 to 2022 as reflected in Google’s Ariane-related “launch calendars.”⁶⁷³ As shown in the figure, the number of product launches exceeds 1,600 in every year—that is, more than four product launches each day of the year (on average). Such a large number of launches—more than 13,000 over the 2016 to 2022 period—is more evidence of Google’s ongoing efforts to invest in and improve its products.

⁶⁷² GOOG-DOJ-AT-00037032.

⁶⁷³ See Robert J. McCallum Letter to Kaitlyn E. Barry and Kelly D. Garcia (July 20, 2023).

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Figure 66: Google Display Product Launches from Ariane Launch Calendars, 2016-2022

Sources: Exhibits A-H of Robert J. McCallum Letter to Kaitlyn E. Barry and Kelly D. Garcia (July 20, 2023)

Notes: Launches are defined as unique Ariane-launch IDs.

3. Lowering prices when complementary products are priced jointly

479. Among the most fundamental economic teachings about complementary products, including but not limited to ad tech components, is that if they are priced separately, prices will tend to exceed the prices that would obtain if the products were instead priced jointly. In the context of complements along a vertical chain, this phenomenon is known as “double marginalization” (or, synonymously, “double markups”),⁶⁷⁴ whereas in the context of pricing complements in other settings it is known as the “Cournot complements” pricing problem.⁶⁷⁵ In

⁶⁷⁴ See, e.g., *Carlton and Perloff (2005)*, pp. 415-417; and Elisa Duran-Micco and Jeffrey M. Perloff (2022), “How Large Are Double Markups?,” *International Journal of Industrial Organization*, 85(102885): 1-22 (hereinafter *Duran-Micco and Perloff (2022)*), p. 16 (finding that “double markups are enormous”).

⁶⁷⁵ See, e.g., *O’Brien (2008)*, p. 48 (stating that “[t]he fundamental insight emerging [from] the Cournot complements model is that independent pricing by producers of complements leads to higher prices and lower output than joint pricing”).

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B. PLAINTIFFS’ ANALYSIS IMPLIES THAT GOOGLE HAS AN EXPANSIVE DUTY TO DEAL WITH ITS RIVALS, A STANDARD THAT WOULD HARM INVESTMENT INCENTIVES AND THUS WELFARE

517. Plaintiffs’ experts’ claims imply that Google has an expansive duty to deal with rivals and, in many cases, an obligation not only to deal with rivals, but to redesign its products to facilitate this duty to deal.

518. Specifically:

- Plaintiffs’ experts claim that Google provided unrestricted access to Google Ads exclusively to AdX.⁷³⁶ The claim that this conduct is anticompetitive implies that Google has an obligation to make Google Ads demand available to and integrate with third-party ad exchanges in the same way Google Ads is integrated with Google’s ad exchange.⁷³⁷ Providing such access would not just require Google to contract with rival exchanges, but to modify its Google Ads product to facilitate such interactions, making it even more likely to harm investment incentives and welfare than simpler duty-to-deal claims that do not require technological changes to the products in question.
- Plaintiffs’ experts claim that Google provided access to real-time bids from AdX exclusively to DFP.⁷³⁸ The claim that this conduct is anticompetitive would require Google to integrate AdX with third-party publisher ad servers in the same way AdX is integrated with Google’s publisher ad server in order to make real-time bids from AdX

⁷³⁶ See, e.g., *Lee Report*, § VII.B.

⁷³⁷ It is noteworthy that Google already allows rival ad exchanges access to Google Ads demand through AwBid, but Plaintiffs’ experts assert that this access is insufficient (*Lee Report*, § VII.B.3).

⁷³⁸ See, e.g., *Lee Report*, § VII.C.

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accessible to other publisher ad servers.⁷³⁹ Providing such access would not just require Google to contract with rival publisher ad servers, but to modify its AdX product to facilitate such interactions, again meaning any requirement to do so would be particularly likely to harm investment incentives and welfare.

- Plaintiffs’ experts argue that Google advantaged AdX by applying dynamic allocation to AdX, but not to rival ad exchanges.⁷⁴⁰ The claim that this conduct is anticompetitive requires Google to integrate rival ad exchanges into dynamic allocation and give them equal treatment to Google’s own demand.⁷⁴¹ Integrating other ad exchanges into Google’s dynamic allocation would not just require Google to contract with rival ad exchanges, but to modify DFP to facilitate such integration, again making any requirement to do so particularly harmful.

⁷³⁹ It is noteworthy that Google already allows rival publisher ad servers access to AdX through AdX Direct, but Plaintiffs’ experts assert that this access is insufficient (*Lee Report*, § VII.C.3).

⁷⁴⁰ See, e.g., *Lee Report*, § VII.D.1.

⁷⁴¹ It is noteworthy that Google did in fact incorporate certain other ad exchanges into dynamic allocation through Open Bidding (f/k/a Exchange Bidding, originally developed in 2015, launched in alpha in 2016, and launched for general use in 2018) and then eventually deprecated dynamic allocation when it transitioned to a unified first price auction (see, e.g., *Lee Report*, n. 949 and ¶¶ 678-679). But Prof. Lee implies that [REDACTED] reflects harm to competition (*Lee Report*, n. 1187 [REDACTED] emphasis added))).

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(b) *Publishers can access AdX without going through DFP*

653. In addition, publishers *can* sell their inventory via AdX even if they do not use DFP. One option for publishers using other publisher ad servers (besides DFP) to accept bids that come from AdX (and thus to sell their ad inventory via AdX) is by using AdX Direct tags. As I understand it, AdX Direct tags are pieces of code that publishers can place on their websites that allow them to request demand from AdX (even if those publishers use third-party ad servers).⁹⁴⁴ Plaintiffs allege that AdX Direct functionality is degraded relative to calling AdX from DFP, claiming that calling AdX from a third-party ad server does not result in a live, real-time bid but instead returns an ad.⁹⁴⁵ But this characterization misconstrues how AdX and DFP historically interoperated, with AdX similarly returning an ad (and not a bid) when called by DFP.⁹⁴⁶ Moreover, to my knowledge, publishers *can* receive real-time demand via AdX Direct, but Google policy limits publishers from then placing the returned ads into additional auction-like

⁹⁴⁴ See, e.g., Google, “Generate Ad Exchange ad tags,” 2023.

⁹⁴⁵ *DOJ Complaint*, ¶ 104 (stating that “Google required publishers to use its ad server to obtain real-time bids from its ad exchange. If a publisher chose not to use DFP, it was relegated to selling impressions to AdX at a floor price based on historical average prices.”). See also *Lee Report*, ¶ 640 [REDACTED] and ¶ 631 [REDACTED] and *Abrantes-Metz Report*, ¶ 413 [REDACTED]

⁹⁴⁶ See, e.g., GOOG-AT-MDL-012324145 (describing a potential AdX integration with a third-party ad server, including providing an [REDACTED] to which a comment responds “We don’t even do that for DFP. [Dynamic Allocation] doesn’t need that to work”); and GOOG-DOJ-15768395 at -408 [REDACTED]

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processes for determining the winner of the publishers’ impressions.⁹⁴⁷ Plaintiffs have certainly not shown that this nuanced distinction harms ad server competition.

654. Publishers have demonstrated that selling via AdX Direct is a viable way to monetize their inventory. According to AdX data produced in this case, AdX Direct accounted for more than 10 percent of total annual U.S. AdX impressions through 2019.⁹⁴⁸ Although publishers’ use of AdX Direct has fallen substantially in recent years, the program remains available to publishers. In other words, Google continues to offer publishers not using DFP a viable way to sell their inventory via AdX, with the recent decline in the usage of AdX Direct being consistent with the integration of DFP and AdX creating increasing benefits for publishers.⁹⁴⁹

655. Furthermore, I understand that one significant obstacle in building other AdX integrations with third-party ad servers was a lack of interest by the third-party ad servers (which is again consistent with Google not controlling unique, “must have” demand).⁹⁵⁰ Google documents also demonstrate other obstacles in building AdX integrations with third-party ad servers, including

⁹⁴⁷ GOOG-DOJ-04427670 at -671 (stating that “Passing an impression to Adx is not in violation of our policy. Passing an impression from Adx to any other system that dynamically or programmatically allocates ad calls based on actual or estimated real-time pricing information is in violation of our policy.” (emphasis in the original)). The same document indicates that the policy [REDACTED] by Google account managers or its Policy team.

⁹⁴⁸ Calculated from GOOG-AT-MDL-DATA-000066537 to -482007, GOOG-AT-MDL-DATA-000508827 to -58886, and GOOG-AT-MDL-DATA-000561536 to -4882 (AdX RFP 243 data).

⁹⁴⁹ Plaintiffs’ economic experts focus on the point that AdX Direct is less attractive to publishers than calling AdX from DFP (*Lee Report*, § VII.C.3.a; and *Abrantes-Metz Report*, ¶416). But the better internal interoperation of AdX and DFP is not a sufficient basis for finding a harm to competition.

⁹⁵⁰ GOOG-DOJ-06583662 at -663 (“3rd party ad servers (i.e., not pub owned) have shown a continued reluctance to do the integration coding required without rev share, so we haven’t pursued this work”); and GOOG-DOJ-03610002 at -003 (stating that “North America does not appear to have demand”).

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740. *Second*, Google’s acquisition of Admeld took place in the context of a general decline in the use of yield management. At the time Google initiated the acquisition process in October 2010, my understanding is that real-time bidding (RTB) was not well-established in the marketplace and publishers often sought means to optimize the sequencing of their waterfalls.¹¹²⁶ However, by 2012 (if not earlier), Google documents indicate that yield management was “dying.”¹¹²⁷ Between the beginning of the transaction process in October 2010 and the close of the transaction in December 2011, publishers continued to move away from traditional yield management and sell more impressions through RTB. In fact, Admeld’s RTB revenue surpassed its traditional yield management revenue in September 2011.¹¹²⁸

741. Even Admeld personnel recognized that RTB, and not yield management, was the future. For example, Brian Adams, the former Admeld CTO, explained that Admeld’s yield management was declining 30 percent year over year.¹¹²⁹ For similar reasons, PubMatic and Rubicon transformed themselves into real-time bidding platforms, reflecting the shifting trends in the marketplace.¹¹³⁰ As a consequence of these trends, Admeld stopped developing its yield

¹¹²⁶ See, e.g., IAB, “Real Time Bidding (RTB) Project: OpenRTB API Specification Version 2.5,” December 2016, p. ii (“The RTB Project, formerly known as the OpenRTB Consortium, assembled in November 2010 to develop a new API specification for companies interested in an open protocol for the automated trading of digital media across a broader range of platforms, devices, and advertising solutions.”).

¹¹²⁷ GOOG-DOJ-13281035 at -037.

¹¹²⁸ GOOG-DOJ-11753371 at -372 to -373.

¹¹²⁹ GOOG-DOJ-13281035 at -038.

¹¹³⁰ Adzerk, “Welcoming PubMatic To The AdOS Marketplace,” April 15, 2012 (“PubMatic’s platform combines real-time bidding (RTB), the most comprehensive brand protection tools, extensive audience insights and hands-on support to serve the world’s leading publishers.”); Adzerk, “Welcoming Rubicon Project To The AdOS Marketplace,” April 10, 2012 (“The partnership between Rubicon and Adzerk gives all Adzerk customers access to use a Real Time Trading platform that enables publishers to connect with buyers and sell ad inventory in real